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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/549,918      | 04/14/2000  | Kiyoshi Taguchi      | 10059-350US         | 8909             |

570 7590 07/16/2002

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| EXAMINER |
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LANGEL, WAYNE A

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| ART UNIT | PAPER NUMBER |
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1754

DATE MAILED: 07/16/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

549918

Applicant(s)

Taguchi et al

Examiner

Langel

Group Art Unit

1754

—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

## Period for Response

A SHORTENED STATUTORY PERIOD FOR RESPONSE IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a response be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for response specified above is less than thirty (30) days, a response within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for response is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to respond within the set or extended period for response will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

## Status

- ☒ Responsive to communication(s) filed on 5-7-02
- ☒ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 1 1; 453 O.G. 213.

## Disposition of Claims

- ☒ Claim(s) 1-9 is/are pending in the application.
- ☐ Claim(s) 7-9 is/are withdrawn from consideration.
- ☐ Claim(s) 1-6 is/are allowed.
- ☒ Claim(s) 1-6 is/are rejected.
- ☐ Claim(s) is/are objected to.
- ☐ Claim(s) are subject to restriction or election requirement.

## Application Papers

- ☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
- ☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119 (a)-(d)

- ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
  - ☐ All ☐ Some\* ☐ None of the CERTIFIED copies of the priority documents have been received.
  - ☐ received in Application No. (Series Code/Serial Number) \_\_\_\_\_.
  - ☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
- \*Certified copies not received: \_\_\_\_\_

## Attachment(s)

- ☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). \_\_\_\_\_
- ☐ Interview Summary, PTO-413
- ☐ Notice of References Cited, PTO-892
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Other \_\_\_\_\_

Office Action Summary

The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-6 are rejected under 35 U.S.C. § 103(a) as being unpatentable over British 2,240,284, for the reasons given in the last Office action. Applicant's argument, that from equation (1) in British '284 it is clear that the means of British '284 for feeding carbon dioxide and light hydrocarbons does not read on applicant's reformed gas feeding part, since neither carbon dioxide nor methane is a "hydrogen gas" or "water vapor", and that the present invention is concerned with treating a reformed gas, whereas British '284 is concerned with producing reformed gas, is not convincing, since applicant's claims do not require the treatment of a reformed gas. Applicant has not explained why the means for feeding in the main reactants comprising carbon dioxide and light hydrocarbons to the reactor of British '284 would not be capable of feeding a reformed gas containing at least a hydrogen gas and water vapor. Applicant has not provided any evidence showing that the apparatus structure which would be

required by the recitation of a "reformed gas feeding part for feeding a reformed gas containing at least a hydrogen gas and water vapor" would necessarily be any different from the apparatus structure disclosed in British '284 which is employed for feeding in carbon dioxide and light hydrocarbons to the reactor. Applicant's argument, that British '284 provides no indication of a reaction chamber equipped with a carbon monoxide shifting catalyst body which is positioned downstream from the reformed gas feeding part, is not convincing, since the catalyst body disclosed by British '284 would inherently be located downstream of the means for feeding in the carbon dioxide and light hydrocarbons, since the purpose of the catalyst of British '284 is to catalyze the reaction between the carbon dioxide and light hydrocarbons. Applicant's argument, that British '284 does not mention that the recited catalyst body comprises a carrier containing a metal oxide with a BET specific surface area of at least 10 m<sup>2</sup>/g and platinum supported thereon, is not convincing. British '284 discloses on page 3, lines 21 and 22 that the surface area of the catalysts used preferably varies between 1 and 400 m<sup>2</sup>/g. It would be obvious from such disclosure of British '284 to provide a catalyst support comprising a metal oxide having a BET specific surface area between 10 m<sup>2</sup>/g and 250 m<sup>2</sup>/g, since one of ordinary skill in the art would realize that a high surface area support would be required to provide an overall

catalyst which has such a high surface area. Moreover, British '284 suggests the use of platinum as a catalyst, since the reference teaches on page 3, lines 10 and 11 that one or more compounds of metals of the platinum group may be employed. It is well known that platinum is a platinum group metal. Although British '284 discloses that compounds of the platinum group metal should be employed, it is clear that the recitation of "Pt" as recited in applicant's claim 1 would embrace platinum compounds as well as metallic platinum, since applicant's specification discloses on page 20, the last five lines that the carbon monoxide shifting catalyst body is produced by impregnation of a platinum salt, and further discloses in the Examples that the metal oxide pellets were mixed into a solution of dinitrodiamine platinum and nitric acid. Applicant's arguments, that British '284 does not provide a person of ordinary skill in the art with any motivation to supply carbon monoxide and water vapor to a reaction chamber equipped with a shifting catalyst body, and would not motivate one to realize the low temperatures of the present invention, are not convincing, since applicant's claims do not require the steps of supplying carbon monoxide and water vapor to a reaction chamber equipped with a shifting catalyst body, or a process in which low temperatures are employed.

The papers filed on May 7, 2002 (Certificate of Mailing dated April 30, 2002) have not been made part of the permanent

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records of the United States Patent and Trademark Office (Office) for this application (37 CFR 1.52(a)) because of damage from the United States Postal Service irradiation process. The above-identified papers, however, were not so damaged as to preclude the USPTO from making a legible copy of such papers. Therefore, the Office has made a copy of these papers, substituted them for the originals in the file, and stamped that copy:

COPY OF PAPERS  
ORIGINALLY FILED

If applicant wants to review the accuracy of the Office's copy of such papers, applicant may either inspect the application (37 CFR 1.14(d)) or may request a copy of the Office's records of such papers (i.e., a copy of the copy made by the Office) from the Office of Public Records for the fee specified in 37 CFR 1.19(d)(4). Please do **not** call the technology center's Customer Service Center to inquire about the completeness or accuracy of Office's copy of the above-identified papers, as the technology center's Customer Service Center will **not** be able to provide this service.

If applicant does not consider the Office's copy of such papers to be accurate, applicant must provide a copy of the above-identified papers (except for any U.S. or foreign patent

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documents submitted with the above-identified papers) with a statement that such copy is a complete and accurate copy of the originally submitted documents. If applicant provides such a copy of the above-identified papers and statement within **THREE MONTHS** of the mail date of this Office action, the Office will add the original mailroom date and use the copy provided by applicant as the permanent Office record of the above-identified papers in place of the copy made by the Office. Otherwise, the Office's copy will be used as the permanent Office record of the above-identified papers (i.e., the Office will use the copy of the above-identified papers made by the Office for examination and all other purposes). This three-month period is not extendable.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 C.F.R. § 1.136(a).

A SHORTENED STATUTORY PERIOD FOR RESPONSE TO THIS FINAL ACTION IS SET TO EXPIRE THREE MONTHS FROM THE DATE OF THIS ACTION. IN THE EVENT A FIRST RESPONSE IS FILED WITHIN TWO MONTHS OF THE MAILING DATE OF THIS FINAL ACTION AND THE ADVISORY ACTION IS NOT MAILED UNTIL AFTER THE END OF THE THREE-MONTH SHORTENED STATUTORY PERIOD, THEN THE SHORTENED STATUTORY PERIOD WILL EXPIRE ON THE DATE THE ADVISORY ACTION IS MAILED, AND ANY EXTENSION FEE PURSUANT TO 37 C.F.R. § 1.136(a) WILL BE CALCULATED FROM THE

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MAILING DATE OF THE ADVISORY ACTION. IN NO EVENT WILL THE STATUTORY PERIOD FOR RESPONSE EXPIRE LATER THAN SIX MONTHS FROM THE DATE OF THIS FINAL ACTION.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wayne A. Langel whose telephone number is (703) 308-0248. The examiner can normally be reached on Monday through Friday from 8 A.M. to 3:30 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman, can be reached on (703) 308-3837. The fax phone number for this Group is (703) 305-7718.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-2351.

WAL:cdc

July 11, 2002

Wayne A. Langel  
Primary Examiner  
GAU 1754